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AMENDMENTS TO THE SPECIFICATION:

Please amend the specification as follows:

Please add the following new paragraphs after the third full paragraph on page 6

beginning at line 21.

Also, according to the present invention, there is provided a method for

controlling a salient-pole DC brushless motor having armatures in three phases, an

apparatus for controlling the DC brushless motor comprising voltage applying means for

applying drive voltages to the armatures, high-frequency adding means for adding high-

frequency voltages to the drive voltages, first current detecting means for detecting a

current flowing through an armature in a first phase of the armatures in the three

phases, second current detecting means for detecting a current flowing through an

armature in a second phase of the armatures in the three phases, and reference value

extracting means for extracting a sine reference value depending on the sine value of a

twofold angle which is twice a rotor angle of the motor and a cosine reference value

depending on the cosine value of the twofold angle, using a first current value detected

by the first current detecting means and a second current value detected by the second

current detecting means when the high-frequency voltages are added to the drive

voltages by the high-frequency adding means, and high-frequency components

depending on the high-frequency voltages, rotor angle calculating means for calculating

a rotor angle of the motor using the sine reference value and the cosine reference

value, and three-phase/dg converting means for handling the motor as an equivalent

circuit having a q-axis armature disposed on a q-axis in the direction of magnetic fluxes

from a rotor of the motor and a d-axis armature disposed on a d-axis which is

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perpendicular to the q-axis, and calculating a detected q-axis current flowing through the q-axis armature and a detected d-axis current flowing through the d-axis armature based on the rotor angle of the motor which is calculated by the rotor angle calculating means, the first current value, and the second current value.

Moreover, the method for controlling the DC brushless motor comprises the step of determining the drive voltages in order to eliminate a q-axis current difference which is the difference between the detected q-axis current and a predetermined q-axis command current and a d-axis current difference which is the difference between the detected d-axis current and a predetermined d-axis command current, performing a magnetic pole determination process for detecting the orientation of the magnetic poles of the rotor based on a magnetic pole reference value calculated by a predetermined calculating process, depending on the sine reference value and the cosine reference value which are extracted by the reference value extracting means when the q-axis command value is set to a predetermined magnetic pole detecting current, and performing a proportional plus integral process on the difference between the detected g-axis current and the g-axis command current to calculate the g-axis current difference and also performing a proportional plus integral process on the difference between the detected d-axis current and the d-axis command current to calculate the d-axis current difference when the magnetic pole detecting process is not performed, and performing an integral process only on the difference between the detected q-axis current and the g-axis command current to calculate the g-axis current difference and also performing an integral process only on the difference between the detected d-axis current and the

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d-axis command current to calculate the d-axis current difference when the magnetic

pole detecting process is performed.

With the above arrangement, the time spent after the q-axis command current is

set to the magnetic pole detecting current until currents depending on the magnetic pole

detecting current are detected by the first current detecting means and the second

current detecting means. Therefore, the time required until the sine reference value and

the cosine reference value depending on the magnetic pole detecting current and the

magnetic pole reference value calculated depending on the magnetic pole detecting

current are obtained.

Accordingly, the time required to detect the orientation of the magnetic poles of

the rotor of the motor based on the magnetic pole reference value according to the

magnetic pole detecting process is shortened and thus the current flowing in the

armature can be controlled.

Please amend the paragraph bridging pages 6 and 7 as follows:

The apparatus and method for controlling a salient-pole DC brushless motor

according to the present invention The magnetic pole detecting means sets a first

magnetic pole detecting current and a second magnetic pole detecting current which is

opposite in direction to the first magnetic pole detecting current as the magnetic pole

detecting current, and detects the orientation of the magnetic poles of the rotor based

on the difference between a first magnetic pole reference value calculated by the

predetermined calculating process depending on the sine reference value and the

cosine reference value which are extracted by the reference value extracting means

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when the first magnetic pole detecting current is set, and a second magnetic pole

reference value calculated by the predetermined calculating process depending on the

sine reference value and the cosine reference value which are extracted by the

reference value extracting means when the second magnetic pole detecting current is

set.

Please amend the first full paragraph on page 7 beginning at line 11 as follows:

With the above arrangement, as described in detail later on, the sign of the

difference between the first magnetic pole reference value calculated when the first

magnetic pole detecting current is set as the magnetic pole detecting current and the

second magnetic pole reference value calculated when the second magnetic pole

detecting current is set as the magnetic pole detecting current is inverted depending on

the orientation of the magnetic poles of the rotor. Therefore, the magnetic pole

detecting means can detect the orientation of the magnetic poles of the rotor can be

detected based on the difference between the first magnetic pole reference value and

the second magnetic pole reference value.

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